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SUBJECT: TAIWAN'S RFID INDUSTRY - LOTS OF HYPE, LIMITED
POTENTIAL

Summary

1. (SBU) Taiwan industry and government is seriously interested in the economic potential of radio frequency identification technology. Much of the focus is on logistics/supply chain management systems that would require a universal standard and inexpensive tag manufacturing. Taiwan observers believe that the EPCglobal standard, favored by U.S. industry, will become dominant globally. They are little concerned about PRC efforts to develop a unique proprietary standard. Predictions vary about how soon tag prices will drop to levels that make widespread RFID supply chain management feasible. Taiwan currently has an advantage in the manufacturing of tags and possibly the readers also. However, Taiwan industry and policy makers should also seek to develop the island's potential to produce integrated RFID supply chain management systems, if the RFID industry is to become a new source of sustained economic growth. End summary.

The Hype

2. (U) Wal-Mart's requirement that its top suppliers attach radio frequency identification (RFID) tags to certain products has dramatically increased expectations about the growth of the RFID industry and its potential to spur economic growth in Taiwan. Many Taiwan firms are preparing to take advantage of the expected boom in the RFID industry. Major multi-nationals including HP and Microsoft have established research facilities in Taiwan to develop RFID hardware and applications. The Taiwan government's Industrial Development Bureau offers subsidies for firms developing RFID technology, and the quasi-government Industrial Technology Research Institute (ITRI) has established the "RFID Research and Industrial Application Alliance" with private sector partners. Nevertheless, the real economic potential of RFID is still not clear.

Options for Taiwan Business - Two Systems...

3. (SBU) There are numerous potential applications for RFID technology. Many Taiwan entrepreneurs break down potential business opportunities into two types of systems -- open and closed. Open systems include the type of broad logistics/supply chain management systems that are required to implement Wal-Mart's new mandates. This kind of system has two crucial features. First, the system must have universal standards so that many different firms can access information recorded on RFID tags. This has caused some international concern, particularly about PRC moves to establish its own proprietary standards. However, Taiwan RFID industry executives and analysts express few concerns about PRC efforts to develop unique standards. Most believe that the EPCglobal standard, favored by U.S. industry, will become the dominant standard for supply chain management globally. Taiwan's ITRI is a member of the EPCglobal Inc., the industry organization that developed the standard. (Note: EPC stands for electronic produce code. End note.)

4. (SBU) In addition, an effective logistics/supply chain management system will require low-cost, mass-produced tags. Otherwise the savings offered by more efficient supply chain management will be eaten up by the cost of implementing the system. Industry insiders frequently cite a cost of USD 0.05 per tag or less as the break even point for an overall cost savings system. David Wang, the Chairman of Avisotech and a businessman who is active in Taiwan government and industry association efforts develop the RFID industry in Taiwan, doubts the cost of materials will permit production of economically efficient RFID tags in the near future. However, Huang Chi-fang, an engineering professor at Taiwan's Tatung University, who works on the development of RFID tag antennas, told AIT/T that the costs have already dropped below USD 0.25 per tag and would fall to USD 0.05 within two years.

15. (U) Closed systems, on the other hand, can operate with unique standards and less concern about the tag costs. This kind of system includes medical records and supply management in hospitals and other healthcare facilities; security systems, such as port container security programs; mobile payment systems for toll roads, public transportation and similar services. Tags can frequently be reused in these types of closed systems and are generally used in more limited quantities. Because the costs of the tags are less important, some Taiwan firms are already making money by providing components for this kind of system.

...and Three Products

16. (U) Any kind of RFID system has three basic components -- tags, readers and systems. Taiwan firms have already identified the manufacture of tags and to a lesser extent readers as the areas where they can compete internationally. Because the tags basically consist of a chip attached to an antenna, Taiwan's powerful semiconductor manufacturing industry gives it an advantage in that area. However, Taiwan firms have all but abandoned ambitions to provide integrated systems. Although Taiwan firms might manufacture the computers and servers that are key components, they assume that firms like IBM, Microsoft and HP will dominate the industry in designing and marketing integrated systems.

Future Potential

17. (U) Taiwan already has a good start in the RFID tag market. ITRI predicted last year that 2004 production of tags and readers by Taiwan firms would reach NT\$ 5 billion (over USD 150 million). According to a study by the International Data Corporation, the annual growth rate for the RFID industry will reach 73 percent for the next four years. In 2008, the global market for tags would reach USD 5.6 billion with as much as half produced by Taiwan firms. The study predicts the market for readers will total USD 4.8 billion and USD 9.6 billion for integrated systems. However, Taiwan firms are likely to claim only one percent of the systems market.

18. (SBU) Taiwan's lack of competitiveness in the systems market is already apparent in the domestic market. The key players in the emerging RFID systems market are local firms acting as the agents for U.S. companies. Fortune Information Systems Co., which claims a customer base with more than NT\$ 100 billion (USD 3.2 billion) in sales, provides systems produced by SSA Global, a U.S. firm. Ascent Technology is an agent of the U.S. firm Savi Technology Inc., which provides port security RFID technology to Kaohsiung Harbor.

Comment - Moving Beyond Tags

19. (SBU) Taiwan firms are well placed to capture a large share of the global RFID tag market and will probably also be quite competitive in reader production as the RFID industry expands. The island's expertise in using original equipment manufacturing (OEM) and original design manufacturing (ODM) manufacturing models to reduce costs as well as its strong foundation in information technology, communications equipment, and semiconductor manufacturing will be a key advantage. However, tag and reader manufacturing may not offer Taiwan much in stimulating sustained economic growth. Price pressures will keep RFID tag manufacturing margins razor thin. This is exactly the kind of low margin production that is already moving wholesale to Mainland China causing fears of "hollowing-out" and "marginalization" of the Taiwan economy. Taiwan businesses and economic policy makers should seek to expand Taiwan's potential to capture more of the systems integration market for the RFID industry. This is the kind of "knowledge-based" industry that Taiwan seeks to encourage and that will allow it to advance economically as manufacturing moves increasingly to low wage countries like the PRC. End comment.

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